

# European emissions trading and the international competitiveness of energy-intensive industries: a legal and political evaluation of possible supporting measures

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## Abstract

The EU Emissions Trading Directive is expected by European energy-intensive industries to harm their competitiveness vis-à-vis non-European competitors. Many additional measures have thus been proposed to ‘level the playing field’ and to protect the competitiveness of European energy-intensive industries within the larger effort of reducing Europe’s greenhouse gas emissions and of meeting its obligations under the 1997 Kyoto Protocol. This article evaluates a range of proposed measures based on a set of political and legal criteria, including environmental effectiveness; the need to consider differentiated commitments, responsibilities and capabilities; conformity with world trade law and European Union law; and Europe’s overall political interests. We discuss measures that could be adopted by the European Union and its member states, such as direct support for energy-intensive industries, restrictions of energy-intensive imports into the European Union through border cost adjustments, quotas or technical regulations, and cost reimbursement for affected developing countries. We also analyse measures available to multilateral institutions such as the United Nations Framework Convention on Climate Change and its Kyoto Protocol and the World Trade Organisation. We conclude with a classification of the discussed measures with red (unfeasible), yellow (potentially feasible) or green (feasible) labels.

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## 1. Introduction

The year 2005 marks two milestones in global climate governance. On 16 February, the Kyoto Protocol to the 1992 United Nations Framework Convention on Climate Change (‘Climate Convention’) entered into force, putting into place legally binding greenhouse gas emissions reduction targets for industrialised countries, as well as three new flexible mechanisms to mitigate climate change: joint implementation, the clean development mechanism, and international emissions trading. Rules to operationalise these mechanisms were adopted during the first Conference of the Parties acting as Meeting of the Parties to the Kyoto Protocol (COP/MOP1) in December 2005 in Montréal.

The second milestone has been on 1 January 2005 the start of the first regional scheme for trade in carbon dioxide emission allowances, created through the EU Emissions Trading Directive (European Commission, 2003; see Dornau, 2005). The scheme is a cap-and-trade system, which places a ceiling on the total emissions of all European participants,<sup>1</sup> based on which emissions allowances are subsequently allocated to participants. The Emissions Trading Directive covers large, energy-intensive industries, including the steel, glass, pulp and paper and cement industries, as well as large combustion installations, including power generators. The Directive will be implemented in two phases: a mandatory ‘warm-up’ phase from 2005 to 2007, and a second mandatory phase from 2008 to

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<sup>1</sup>Another form of emissions trading is baseline-and-credit emissions trading, in which emissions credits are generated through emission reductions compared to a baseline. Examples are the clean development mechanism and joint implementation.

2012, which corresponds to the commitment period of the Kyoto Protocol. Allowances are to be allocated by national governments among all participants according to procedures laid down in the Directive. In the first phase, the Directive will cover only carbon dioxide emissions, with the option to include other greenhouse gases in its second phase. The allowances are primarily allocated for free ('grandfathering'). In addition, governments may auction 5% of allowances in the first phase and 10% in the second.

The entry into force of both the Kyoto Protocol and the Emissions Trading Directive has resulted in a variety of potential or real impacts on trade relations between European producers and their international competitors that operate in countries that do not fall under the Kyoto regime<sup>2</sup> or that have otherwise less strict climate policies in place<sup>3</sup>. This situation has given rise to much debate in academic and policy literature.<sup>4</sup> European energy-intensive industries, in particular, have argued that the start of the EU emissions trading scheme will reduce their competitiveness (Pocklington, 2002).<sup>5</sup>

These industries bring forward two key concerns: First, due to strong competition in a global market and their past efforts to curb carbon dioxide emissions, European energy-intensive industries fear difficulties in purchasing the needed additional allowances or in achieving the additional energy efficiency. It is also not always possible for energy-intensive industries to pass on their costs—in part or in full—to consumers (Egenhofer et al., 2005; Reinaud, 2005). Second, it is feared that the Emissions Trading Directive would increase electricity prices in Europe, which would raise costs for energy-intensive industries (Egenhofer et al., 2005; Reinaud, 2005; Sijm, 2004; Sijm et al., 2005). The key argument of energy-intensive industries is that producers in non-EU countries, which are not subject to similar restrictions, will not have to bear these additional costs. The Directive would thus create an 'unequal playing field' in international markets and harm industries, employment and economic growth in the European Union.

A large variety of supporting measures have been proposed by representatives of European energy-intensive industries, politicians, environmentalists, academics and think-tanks concerned about the effectiveness of European climate policies and its negative economic consequences. To be effective and practically feasible, these measures

must face a number of demanding tests within the current legal and political context. They must guarantee full environmental effectiveness in accordance with the legally binding climate commitments of the European Union; they must be in accordance with a number of other legal standards of the climate regime, in particular the principle of common but differentiated responsibilities and capabilities; they must not violate world trade law or European Union law; and they must not seriously harm other interests of the European Union, including its overall relations with non-European partner nations, notably the United States.

These tests, however, have not yet been systematically applied to the host of measures discussed in the literature for adjusting the 'unequal playing field' that the Emissions Trading Directive might have created for European energy-intensive industries in the world trade system. This article is therefore a first attempt at providing this assessment.

Section 2 will elaborate the five core tests that any legal or political measure at 'adjusting' the 'unequal playing field' for European energy-intensive industries must pass. Sections 3–5 describe and review a range of potential policy measures that could be adopted, and analyse to what extent the five tests used in this study will be met. Our analysis covers measures that could be adopted by the European Union and its member states (Section 3); measures that could be adopted by multilateral institutions and organisations, including the World Trade Organisation (WTO) and the Climate Convention (Section 4); as well as measures that could be adopted by affected firms or business associations (Section 5). In Section 6, we conclude by classifying the options into three categories according to their legal and political feasibility.

We restrict our analysis to legal and political criteria and exclude economic constraints, such as the cost-effectiveness of measures. Likewise, we merely assume, as a theoretical hypothesis based on some evidence in the literature, that the Emissions Trading Directive would lead to 'an unequal playing field' for energy-intensive industries. This relationship is not analysed in itself in this study.

Finally, we restrict our analysis to direct effects for European energy-intensive industries. Additional measures—not further discussed in this article—could address the *indirect effects* of the Emissions Trading Directive on European energy-intensive industry, notably the overall increase in electricity prices.<sup>6</sup> Most of these measures

<sup>2</sup>This includes all developing countries, which are exempt from quantified, legally binding reduction obligations at least until 2012, and the United States and Australia, which have not ratified the Kyoto Protocol and are hence not bound by its regulations.

<sup>3</sup>This includes non-EU Eastern European countries, which are covered by the Kyoto Protocol and its reduction regime, but which have committed to less demanding reduction obligations than the EU members.

<sup>4</sup>See discussions in Assunção and Zhang, 2002; Biermann and Brohm, 2005; Brack et al., 2000; Brewer, 2003, 2004; Buck and Verheyen, 2001; Charnovitz, 2003; Lodefalk et al., 2004.

<sup>5</sup>These concerns are reported, for example, in a January 2004 paper of the energy-intensive industries, available at: [http://www.cembureau.be/Cem\\_warehouse/1-ENERGY%20INTENSIVE%20INDUSTRIES-JANUARY%202004.PDF](http://www.cembureau.be/Cem_warehouse/1-ENERGY%20INTENSIVE%20INDUSTRIES-JANUARY%202004.PDF), accessed 15 December 2005.

<sup>6</sup>The European Union and its member states could (1) separate the emission allowance market from the power market, to the effect that power producers would only be able to pass on average costs and not full marginal costs of carbon emissions; (2) auction power-related emission allowances and recycle the revenues to the energy-intensive industries; (3) freely allocate allowances for electricity consumption to the industrial sector, which would then pay power producers partly by allowances for their emissions; (4) improve opportunities for new entrants—that use less greenhouse gas intensive technologies—to enter the electricity market, thereby encouraging greater competition and reducing the possibility for others in the electricity markets to pass on the full carbon costs to their consumers; (5) place a cap on power prices, thereby avoiding large price

require a revision of the Emissions Trading Directive. Although most measures are *prima facie* unproblematic from a legal point of view and under the purview of the EU competence to act, their applicability, including the political feasibility and environmental effectiveness, requires a more detailed assessment that is beyond the scope of this study.

## 2. Evaluation criteria

### 2.1. Environmental effectiveness

Any measure to ‘adjust the unequal playing field’ of European energy-intensive industries must guarantee that the quantified emissions reduction targets under article 3.1 of the 1997 Kyoto Protocol will be met. This test is not merely a political command, but a binding obligation of the European Union and its member states under public international law. Limiting the adverse effects of greenhouse gas emissions also flows from general international law, including the ‘no-harm obligation’ under principle 2 of the 1992 Rio Declaration on Environment and Development. Any adjusting measure must hence guarantee that the European Union will have reduced its overall emissions of controlled greenhouse gases by 8 percent by the end of 2012.

### 2.2. Differentiated commitments, responsibilities and capabilities

Any measure adopted by the European Union, its member states or multilateral institutions will have to be designed according to the legal differentiation in the current climate governance system.

First, any measure must comply with the principle of common but differentiated responsibilities and capabilities as enshrined in article 3.1 of the Climate Convention. This principle provides for different treatment of developing countries based on special needs and circumstances, future economic development and historical contributions to causing global warming (Sands, 2003, p. 287). The principle thus requires a distinction between trade measures that affect non-European industrialised countries and measures that affect developing countries (Biermann and Brohm, 2005).

Second, any measure must be designed according to the detailed legal obligations of targeted countries under the different treaties. Non-EU countries fall into three<sup>7</sup> categories, all of which have different legal status and obligations in climate governance:

- parties to the Climate Convention and its Kyoto Protocol, with further differentiation among OECD countries, such as Japan; countries with economies in transition, such as the Ukraine; and developing countries, such as Morocco;
- parties to the Climate Convention but not to the Kyoto Protocol, with further differentiation (if applicable) among OECD countries (including the United States), countries with economies in transition, and developing countries;
- non-parties to both the Climate Convention and the Kyoto Protocol, such as Iraq.

This distinction implies that any measure must be carefully designed. Moreover, the design of potential measures needs to take into account the principle of international cooperation (Sands, 2003, pp. 249–251), which follows also from world trade law. This implies that before unilateral measures are adopted, states should first aim to solve the problem at a bilateral or multilateral level, for example, through negotiation or consultation.

### 2.3. Conformity with world trade law

Furthermore, any measure to ‘adjust the unequal playing field’ must comply with world trade law as enshrined in the various agreements under the WTO.

In particular, the General Agreement on Tariffs and Trade (‘GATT’) requires that its members must not discriminate between like products from domestic producers and producers from other member countries (article III), and that a country must not discriminate among like products from different trading partners (article I). These provisions could restrict measures that would discriminate between parties and non-parties to the Kyoto Protocol, including the United States. A key question in academic and political debate is the definition of ‘like products’. For example, are shrimps caught with nets that exceedingly kill endangered sea turtles ‘like’ other shrimps that had been caught with more turtle-friendly nets (Biermann, 2001)? This also bears on determining the compatibility with WTO law of many other trade measures aimed at levelling the playing field, including mandatory energy-efficiency standards and import quotas. It is still open to debate whether governments could distinguish between like products on the basis of international recognition of the climate change problem (Buck and Verheyen, 2001, p. 9).

Neither the Climate Convention nor the Kyoto Protocol prescribes specific trade measures to reach their targets (unlike, for example, the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer). Instead, both treaties call for coherence between climate policy and world trade law (Climate Convention, 1992, article 3.5; Kyoto Protocol, 1997, article 2.3). Yet both treaties give no specific guidance whether, and to what extent, trade restrictions could be acceptable.

(footnote continued)

increases, or (6) implement electricity sector benchmarking of allowances (see, for a discussion, Egenhofer et al., 2005; Reinaud, 2005; Sijm, 2004; Sijm et al., 2005).

<sup>7</sup>Theoretically, one could also distinguish countries that have ratified, but do not comply with, either the Climate Convention or its Kyoto Protocol.

If certain measures adopted by WTO member states would be seen as violating core principles of the GATT—such as non-discrimination—they could be justified based on the general exception clause under article XX of GATT. This allows exceptions for measures ‘necessary to protect human, animal or plant life or health’ and for measures ‘relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption’, provided that the measures do not ‘constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade’. Extensive case law under the WTO dispute settlement mechanism has defined the scope of these provisions (see Biermann (2001), with further references). In general, a justification under article XX is to be examined on a case-by-case basis; at this stage, no case submitted to the WTO dispute settlement mechanism has dealt specifically with trade-related climate policies. Its legal assessment hence remains ambiguous.

In addition, the WTO Agreement on Technical Barriers to Trade (‘TBT Agreement’) aims to ensure that technical regulations and standards do not unnecessarily restrict trade, which could include technical regulations or standards on energy efficiency or greenhouse gas emissions, as well as climate labels for energy-intensive products or their production processes. Finally, the WTO Agreement on Subsidies and Countervailing Measures (‘SCM Agreement’) regulates subsidies. Here, this study needs to evaluate whether non-compliance with, or non-ratification of, the Kyoto Protocol can be considered a subsidy under the SCM Agreement (thus allowing the imposition of countervailing measures), and to what extent subsidies for energy-intensive industries are compatible with the SCM Agreement.

#### 2.4. *Conformity with European Union law*

In addition to international environmental law and trade law, any measures of the European Union, of its member states and of private entities residing in the European Union must respect EU law.

First, any measure must comply with the EC Treaty and related law. This law prohibits, for example, quantitative restrictions on imports and exports (articles 28 and 29 EC Treaty), which need to be taken into account particularly when member states still have some flexibility, for example, regarding the scope of emissions trading and the allocation of emission allowances (Teuben, 2005). Furthermore, provisions on competition (articles 81–86) and state aid (articles 87–89) of the EC Treaty merit attention. For example, EU or member state measures should prevent cartels that create competitiveness distortions (Teuben, 2005). The main constraints by EU state aid law correspond largely to concerns posed by the SCM Agreement. Questions of state aid will need to be evaluated on a case-by-case basis, but member states wishing to level

the playing field, for example, by allocating more emission allowances to the energy-intensive industries for free, need to take into account potential distortive effects.

Additionally, some measures would require amendments of the Emissions Trading Directive, for example, changing the allocation method, benchmarking (setting an industry-wide standard), and increasing the possibilities for exemptions. A review of the Emissions Trading Directive is due in 2006, and the European Commission has already started a stakeholder survey on the Directive.<sup>8</sup> This review will include the question of inclusion of other relevant sectors and of other greenhouse gases, the allocation method, the use of credits from the clean development mechanism and joint implementation, and benchmarking (European Commission, 2003, article 30.2). Although one could amend the Emissions Trading Directive before the start of its second phase (2008–2012), major changes will probably take longer. The main constraints are less legal than political, as changes in the Emissions Trading Directive will be preceded by a stakeholder debate and put into place only after lengthy discussions in the EU decision-making bodies.

#### 2.5. *Overall political interests of the European Union*

Finally, to be realistic, any measures must be in line with general political objectives of the European Union and its member states. In particular, the European Union will need to take its overall relationship with the United States and the key developing countries into account also when designing climate policy (Biermann, 2005). Certain measures that would have been legally possible are likely to seriously worsen political relations with either the United States or key governments in the South, and are thus not advisable.

### 3. Measures by the European Union or its member states

This section evaluates potential measures that could be taken by the European Union or its member states. We discuss both governance levels in one section because the policies of the Union and its members are interrelated and because measures can often be implemented at either the EU or the national level.

#### 3.1. *Direct support for energy-intensive industries*

First, the European Union or its member states could directly soften the regulative impact of the Emissions Trading Directive for energy-intensive industries in Europe.

One avenue would be to lower carbon constraints, for example, through including other gases in the emissions trading scheme or by a more generous allocation system

<sup>8</sup>See <http://europa.eu.int/comm/environment/climat/emission.htm>, accessed 1 August 2005.

(Egenhofer et al., 2005). Energy-intensive industries could also be partially exempted from the Emissions Trading Directive. For example, governments could relieve large process emitters, such as the cement industry, by exempting process emissions from the cap (Reinaud, 2005). Member states could also exempt energy-intensive industries from other emission reduction obligations, such as carbon or energy taxes (Assunção and Zhang, 2002; Charnovitz, 2003). Additionally, member states could allocate emissions rights based on a benchmark at the national level (Reinaud, 2005).

Such measures to exempt energy-intensive industries from the regulations could violate, first, the WTO rules on subsidies and European state aid law. More importantly, such exemptions are likely to reduce the environmental impact of European climate policy and to impair the chances of EU compliance with its legal obligations under the Kyoto Protocol, even though the exact reduction of the environmental effectiveness of the Emissions Trading Directive through exemptions is difficult to ascertain, as this will in part depend on whether more demanding measures will be enacted in parallel in other sectors as a compensation.

Another menu of options for the European Union or its member states would be to provide targeted subsidies to energy-intensive industries. These could include subsidies for innovative, climate-friendly technologies (Charnovitz, 2003), direct subsidies, tax exemptions, provision of goods and services, or loan guarantees (Assunção and Zhang, 2002; Brack et al., 2000). Subsidies can be provided up to a baseline to level the playing field (Zhang, 2001), or as a one-time subsidy to deal with the ‘first shock’ of meeting emission reduction obligations (Assunção and Zhang, 2002, p. 5).

Most of these measures could conflict with the WTO SCM Agreement. The key question is whether measures are to be defined as ‘prohibited’, ‘actionable’ or ‘non-actionable’ subsidies under the SCM Agreement. Prohibited subsidies are subsidies that are contingent upon export performance or upon the use of domestic over imported goods (article 3 SCM Agreement). For example, subsidies based on the use of domestic, low carbon-emitting products over high carbon-emitting imports are not allowed (Assunção and Zhang, 2002). Actionable subsidies are subsidies that are specific (aimed at certain enterprises) and that cause injury to the domestic industry of another member or serious prejudice to the interests of another member (article 5 SCM Agreement). If a subsidy is not specific, it is non-actionable. Non-actionable subsidies also include specific subsidies that fulfil certain conditions (article 8 SCM Agreement), for example, subsidies for assistance in research (not more than 75% of costs) or adaptation to more stringent environmental requirements for existing facilities (not more than 20% of costs). However, the scope of non-actionable subsidies is rather small (Buck and Verheyen, 2001).

The categorisation of potential measures is thus key for determining their compatibility with WTO law. Border adjustments for the costs of emission allowances for exports may be challenged if they are contingent upon export performance and would thus be prohibited. In addition, Annex I to the SCM Agreement provides a list of prohibited export subsidies, but it seems that the correct interpretation of this Annex would likely exclude energy-related border cost adjustments (Biermann and Brohm, 2005; Ismer and Neuhoff, 2004). In this case, one needs to distinguish between border cost adjustments on exports for the costs borne by final products or through inputs that are physically incorporated in the final product, and for the costs of inputs that are not physically incorporated. The legality of the latter is still ambiguous (Biermann and Brohm, 2005; Lodefalk et al., 2004, pp. 62–63).

Other climate-friendly subsidies for energy-intensive industries will either need to fall within the limited definition of non-actionable subsidies or outside the definition of prohibited and actionable subsidies. Therefore, it is necessary that the subsidies should be non-discriminatory, meaning that they need to apply to industries producing for the domestic and for the foreign market. Climate subsidies aimed at a few energy-intensive industries are likely to be found to be specific. However, ‘if eligibility for, and the amount of, a subsidy were linked directly to concrete criteria—for example, energy efficiency or intensity—the subsidy might not be considered “specific” even if it were only applied to one firm and industry, and therefore be perfectly consistent with WTO rules and climate change policies’ (Assunção and Zhang, 2002, p. 5). Climate subsidies aimed at reducing greenhouse gas emissions from processes and production methods are more likely to be challenged under the SCM Agreement. However, if climate subsidies are designed solely to assist domestic producers to make climate-friendly products, a challenge under the SCM Agreement seems unlikely (Lodefalk et al., 2004).

Changes in allocation of emission allowances in the EU emissions trading scheme will also need to conform to WTO rules on subsidies as well as EU competition and state aid law. If emissions are grandfathered in one country and auctioned in another, this may distort competition, since different allowance allocation methods would alter financial positions and competitiveness among firms (Woerdman, 2002, p. 282). In this case, grandfathering could be seen as an actionable subsidy. Buck and Verheyen (2001), however, argue that the initial allocation does not amount to an actionable subsidy, since it can neither be regarded as a ‘financial contribution’, nor as ‘income or price support’ under the SCM Agreement, and since the emission allowances correspond to an obligation to only emit greenhouse gases under a certain cap. Unless this cap is set at a very generous level, the initial allocation would thus not likely be seen as a subsidy (also supported by Lodefalk et al., 2004, p. 71).

### 3.2. Restrictions of energy-intensive imports into the European Union

The playing field for energy-intensive European industries could also be improved by measures that restrict the imports into Europe of producers from countries that face lower energy prices due to less environmental regulation. There are at least six types of measures theoretically available:

(1) *Border cost adjustments for imports*: Governments could consider adjustments at the EU border for the additional costs incurred by energy-intensive European industries in order to address a potential problem of ‘free riders’. The literature has so far mainly discussed border tax adjustments, such as an adjustment for higher European energy prices because of (climate-related) energy taxation in many European countries (Biermann and Brohm, 2005; Brack et al., 2000; Brewer, 2004; Lodefalk et al., 2004). However, since the rationale of both mechanisms is comparable, it appears justifiable to extend the findings of the literature on border tax adjustments also to border cost adjustments, such as for additional costs through emissions trading. Since the Emissions Trading Directive is not a tax, the costs imposed by it would have to be translated into a tax equivalent, implying that a calculation of the costs of the Emissions Trading Directive is necessary (Reinaud, 2005). Ismer and Neuhoff (2004), for example, suggest applying border cost adjustments based on the costs for production with best available technology and on the average cost of emission allowances. It remains unclear whether governments can apply border cost adjustments for costs incurred during the production stage. For inputs physically incorporated into the final products, border cost adjustments may be allowed. For inputs that are not physically present in the final product (including energy), this is less certain, but possibly also acceptable (e.g. Biermann and Brohm, 2005). There is no case law addressing these questions.

If the core provisions of world trade law would prohibit such forms of border cost adjustment, it has been argued that article XX GATT, the general exception clause, could be invoked, provided that the emissions trading scheme that includes border cost adjustments is carefully designed (Ismer and Neuhoff, 2004). Careful design in this case means, among other things, that governments have to engage in multilateral negotiations before unilaterally applying border cost adjustments, that other countries should not be forced to adopt the same approach as the state that takes a certain measure, and that different development levels of countries are taken into account (Ismer and Neuhof, 2004).

A system of border cost adjustments could also be linked to the Emissions Trading Directive (Ismer and Neuhoff, 2004). The method of allocation would be important: auctioning emission allowances—compared to grandfathering—would strengthen the legal case for border cost adjustments, because companies would incur direct costs if

they had to acquire emissions rights, instead of having them granted free of charge through grandfathering. Border cost adjustments would hence be a good way of offsetting the costs of auctioning for companies. As Ismer and Neuhoff (2004, p. 36) put it, ‘[t]he main economic argument against auctions of emission certificates is the potential reduction of international competitiveness and the implied job losses. This argument can be eliminated if border [cost] adjustment is implemented’.

(2) *Quotas*: Theoretically, the European Union and its member states could apply quota systems and allow energy-intensive imports from non-Kyoto countries only up to a baseline level (Zhang, 2001). This would clearly conflict with core norms of world trade law—notably article XIII GATT that prohibits discriminatory quantitative restrictions for like products on imports—and would thus need to be justified under article XX GATT. Because any recourse to article XX requires the choice of the relatively least trade restrictive measure, and because it seems that border cost adjustments would be more in line with general WTO principles of non-discrimination, it is unlikely that quotas would be legally and politically feasible.

(3) *Technical regulations and standards*: The European Union and its member states could adopt technical regulations or standards for energy efficiency or greenhouse gas emissions of energy-intensive products that would also apply to imported products (Brack et al., 2000; Buck and Verheyen, 2001; Jinnah, 2003; Stokke, 2004). These can be related to either the energy use of the product itself, or—more relevant to energy-intensive industries—the energy used during the production process. Legally, the question arises to what extent such technical regulations or standards are compatible with the WTO TBT Agreement. Two distinctions need to be made. First, there are different rules for (mandatory) ‘technical regulations’ and (voluntary) ‘standards’. Technical regulations are allowed unless they create ‘unnecessary obstacles to international trade’ (article 2.2 TBT Agreement). To this end, technical regulations should not be more trade-restrictive than necessary to fulfil a legitimate objective, which includes the protection of the environment and the climate. The TBT Agreement has similar rules for standards in the Code of Good Practice annexed to the agreement, yet which require member states only to ‘ensure that their central government standardising bodies accept and comply with the Code’ (article 4 TBT Agreement). A second distinction is between technical regulations and standards applied to products and those applied to processes and production methods. Here, it is still uncertain whether the TBT Agreement also applies to *non-product-related* processes and production methods, that is, methods that do not alter the characteristics of a product in a way that the product itself pollutes the environment, but that only in themselves pollute the environment (on this distinction, see OECD, 1997; on the legal issues, see Buck and Verheyen, 2001; Lodefalk et al., 2004).

Overall, technical regulations and standards for products seem to be in accordance with the provisions of the TBT Agreement, provided that they aim at fulfilling an environmental objective, are not discriminatory, and are designed in a transparent manner (Lodefalk et al., 2004), although also here in general a case-by-case analysis is required (Buck and Verheyen, 2001).

(4) *Adjusting the Generalised System of Preferences:* Trade of the European Union with a number of (poorer) developing countries is regulated through a Generalised System of Preferences (GSP). Theoretically, the Union could deny or limit preferences for energy-intensive products from those developing countries that have not ratified or implemented the Kyoto Protocol. The current EU proposal for the reform of the GSP (European Commission, 2004) already proposes special preferences for developing countries that have ratified a set of environmental and human rights conventions, including the Kyoto Protocol. This system could possibly be extended by granting additional preferences to developing countries that agree on additional efforts to reduce emissions over and above their commitments under the Kyoto Protocol. While the European Union is to some extent free in negotiating preference agreements with developing countries, an inclusion of ambitious climate targets for developing countries in these agreements is likely to be perceived by these countries as a political conditionality, and would hence worsen relationships between the European Union and the South. Depending on the exact form and content of the conditionality, it might also conflict with the legal principle of common but differentiated responsibilities as enshrined in the Kyoto Protocol and the Climate Convention.

(5) *Counter-measures through a WTO challenge:* The European Union could challenge the failure of internalising external costs of mitigating climate change in products imported from countries without commitments under the Kyoto Protocol under the WTO dispute settlement mechanism, arguing that this would constitute a subsidy (Doelle, 2004). This failure would allow the European Union, as the affected party, to impose countervailing duties. However, neither the GATT nor the SCM Agreement clearly indicates whether the failure to internalise external costs constitutes a subsidy, and there is no WTO case law on this point. The outcome of such a challenge is hence highly uncertain. Notwithstanding the legal outcome of such a dispute, the political consequences are likely to be severe. Furthermore, there is potential for abuse, if countervailing measures are adopted based on non-product-related processes and production methods (Assunção and Zhang, 2002, p. 6). This course of action is hence not promising.

(6) *Punitive tariffs or taxes:* Finally, the European Union and its member states could enact punitive tariffs or taxes, restricting imports from energy-intensive industries from countries that do not have similar commitments under the Kyoto Protocol, notably the United States. However, such

trade sanctions against non-parties to the Kyoto Protocol would probably be deemed insufficiently related to the goal of climate protection to be safeguarded by article XX GATT (Charnovitz, 2003). Such measures—depending on the targeted countries and sectors—would therefore most likely require agreement of the parties of the Climate Convention, the Kyoto Protocol, and/or the WTO.

### 3.3. Influencing consumer awareness and behaviour

The European Union and its member states could also attempt to raise consumer awareness on energy-intensive products produced in accordance with the Emissions Trading Directive, for example, by government-initiated climate labelling (with regard to carbon or energy intensity) of energy-intensive products. One could think of an EU-wide ‘emissions trading label’. Climate labels can raise consumer awareness with regard to the energy efficiency or the greenhouse gas emissions of a product or of its processes and production methods. Mandatory, governmental climate labelling as a tool to level the international playing field could be especially useful if it indicated the greenhouse gas emissions and energy consumption of the production phase. However, it remains unclear whether the TBT Agreement would allow such mandatory labels. On the other hand, voluntary, private labels that include processes and production method requirements could circumvent this problem, as their coverage by the TBT Agreement remains unclear (see also Buck and Verheyen, 2001). Hence, voluntary climate labels for energy-intensive products (and their production processes) are more likely to be compatible with WTO law.

### 3.4. Agreements of the European Union with third countries

The European Union could also conclude bilateral or small-party agreements with a selected group of third countries to deal with the issues of competitiveness of energy-intensive industries, including agreements in which the issue is addressed by including trade-offs with other issue areas (e.g. reducing agricultural subsidies) (Charnovitz, 2003), as well as *ad hoc* agreements dealing solely with the climate issue (which could entail a voluntary commitment of the other country to set emission targets for its energy-intensive industry). Legally, such separate agreements are likely to be unproblematic. Politically, however, they could possibly undermine the Climate Convention and its Kyoto Protocol as the key framework for multilateral action (Biermann, 2005). These costs may outweigh the limited—and uncertain—benefits of bilateral or small-party agreements.

### 3.5. Cost reimbursement for developing countries affected by European measures

Competition for European energy-intensive industries comes increasingly from developing countries. Developing

countries are legally required under both the Climate Convention and the Kyoto Protocol to address their emissions, but have not accepted quantified targets, and are unlikely to do so in the near future. Moreover, the principle of common but differentiated responsibilities requires industrialised countries to do more to mitigate climate change than developing countries. Different financial burdens of climate mitigation measures on companies in industrialised countries and in developing countries are part and parcel of the Kyoto system.

Measures to address the price differential due to different environmental standards in North and South could, however, become legally and politically more feasible if they were accompanied by a reimbursement mechanism that keeps the general principle of common but differentiated responsibilities unaffected. In the case of border cost adjustments, for example, this could be a mechanism that redistributes the proceeds generated through levying duties on importing firms from developing countries again back to developing countries, for example, in the form of subsidies for energy-efficient processes and production methods in the affected industries in the South. In line with the standard procedures of the treaties on ozone-depleting substances, climate and biodiversity, this special mechanism could provide for the reimbursement of the ‘full incremental costs’ incurred by firms in developing countries in upgrading their facilities to become more energy-efficient. This would help simultaneously the goals of climate protection and a fair international playing field in energy-intensive industries. This mechanism would not necessarily entail the creation of a new global fund, but could be accomplished through existing bodies, such as the Global Environment Facility.

#### 4. Measures by multilateral institutions

This section evaluates measures that multilateral institutions could take. The European Union or its member states would have to initiate these measures in the respective organs of the multilateral institutions.

##### 4.1. *Actions by the parties to the Climate Convention and the Kyoto Protocol*

The conference of the parties to the Climate Convention, which from 2005 onwards also serves as the meeting of the parties to its Kyoto Protocol, is increasingly adopting decisions with binding effect. There is thus a potential for gradual rule development through the conference/meeting of the parties. More far-reaching reforms, however, will still require a formal amendment of the Climate Convention and the Kyoto Protocol. The conference of the parties can also adopt further protocols (UNFCCC, 1992, article 17).

There are essentially five measures conceivable. First, one option already pursued by the European Union is to generate support for broadening the scope of the climate

regime after 2012 through convincing some advanced developing countries to adopt some form of quantified commitments. If more countries would be subjected to greenhouse gas emission reduction targets, the effects on the competitiveness of European industry would be less. It is beyond this study to assess the ongoing post-2012 discussions. Suffice it to say that we do not expect that developing countries will accept any significant commitments in the next round of negotiations, with possibly only some minor exceptions, such as Argentina or Kazakhstan (Biermann, 2005).

Second, analogous to the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer, the meeting of the parties to the Kyoto Protocol could decide to restrict trade with non-parties (Brack et al., 2000; Stokke, 2004). This option is theoretically feasible, but politically out of the question as long as the United States has not ratified the protocol. Third, the parties to the protocol could decide to allow for duties or taxes against imports from non-parties (Brack et al., 2000), which would need to meet certain WTO standards as discussed above. Fourth, parties to the Climate Convention and/or the Kyoto Protocol could agree to harmonise energy/greenhouse gas taxation programmes that are applicable to imports and exports under the climate regime (Charnovitz, 2003). This is legally feasible, but politically unrealistic given the lack of tax harmonisation on these issues even within the European Union. Fifth, parties to the Kyoto Protocol could increase the possibilities to obtain credits through the clean development mechanism and joint implementation. However, these measures have to be designed in a way that protects the environmental integrity of these mechanisms. One way to address competitiveness concerns through the clean development mechanism would be to link the technologies used in these projects to ratification of the Kyoto Protocol (Müller, 2002).

##### 4.2. *Actions by the members of the WTO*

The members of the WTO, too, could enact a number of measures. First, the WTO could decide on allowing trade restrictions vis-à-vis countries that have not ratified the Kyoto Protocol, for example, through a ‘waiver’ for trade controls on imports into countries with targets under the Kyoto Protocol (Charnovitz, 2003; Stokke, 2004). The relevant WTO Agreements could also be amended to accommodate competitiveness concerns as a consequence of obligations under the Kyoto Protocol (Buck and Verheyen, 2001; Stokke, 2004). Another option would be that the WTO Ministerial Conference could adopt an interpretative statement of the relevant rules of WTO agreements (Biermann, 2001).

However, governments have been reluctant to explicitly address the interactions of the WTO regime with international environmental agreements in the WTO, and appear to prefer to deal with these issues under environmental treaties. Second, the WTO could agree on the (partial)



harmonisation of international energy-related standards under world trade law, which would level the playing field for industries that would then be less affected by different cost-imposing policies (e.g. Charnovitz, 2003). This would be close to the negotiation of a separate protocol or memorandum of understanding on technical standards under the Climate Convention. Third, the WTO could agree on minimum standards on the permissibility on climate-friendly subsidies (Buck and Verheyen, 2001).

All this could be assisted by reforms in the relationship between the WTO and the Climate Convention. The secretariats of the WTO and the Climate Convention could adopt a memorandum of understanding on the competitiveness effects of climate policies (Van Asselt et al., 2005), or the parties to the WTO and to the Climate Convention could create a consultative mechanism (Stokke, 2004) to discuss the competitiveness effects of climate policies. Also, a standstill agreement between the parties of the Climate Convention and the members of the WTO on climate-friendly subsidies could be concluded (Buck and Verheyen, 2001). Politically—although not legally—decisions of the WTO require consensus of its members, including that of the United States. It is hence unlikely that WTO members would pursue this path if the interests of the United States or of key developing countries were not sufficiently guaranteed.

## 5. Measures by private actors

In addition to public decision-makers in multilateral institutions, EU organs and individual governments, affected industries could consider a range of measures under private agreements and activities. These include private labelling schemes that entice European consumers to buy products from European companies that operate under the Emissions Trading Directive system, as discussed above. Furthermore, affected industries could strive for worldwide and industry-wide agreements on climate targets on a voluntary basis (Reinaud, 2005; Watson et al., 2005). These agreements could concern emissions intensity or research and development cooperation. At first sight, such measures, in particular the labelling approach, seem promising. Voluntary initiatives by private actors are also unproblematic regarding world trade law, although they may face certain restrictions under EU competition law.

## 6. Conclusion

This article has shown that a plethora of measures can be adopted to address a possible ‘unequal playing field’ for European energy-intensive industries resulting from the implementation of the EU Emissions Trading Directive. It provided a non-exhaustive list of potential measures that can be adopted by the European Union, its member states, multilateral institutions, and private parties such as the energy-intensive industries themselves. However, there is also a range of legal and political constraints that have to

be taken into account by governments that wish to adopt such measures. Some constraints clearly advise against certain potential measures, because they would violate world trade law or environmental law, or because it would be unrealistic to adopt these measures given the current state of world politics.

Based on the legal and political evaluation criteria developed in Section 2, we can divide all possible measures into three categories:

‘*Green measures*’—measures that can be implemented without significant political or legal constraints. These include:

- raising consumer awareness;
- voluntary, non-governmental climate labelling;
- limited subsidies or subsidies for climate-friendly products

‘*Yellow measures*’—measures that may be feasible, even though their legal or political feasibility is still unclear or uncertain and requires further research:

- extend the clean development mechanism and joint implementation;
- border cost adjustments for imported product inputs or exports;
- large subsidies for affected European energy-intensive industries;
- mandatory, governmental climate labelling;
- energy efficiency regulations and standards applicable also for importers;
- exemptions for affected European energy-intensive industries;
- duties or taxes on energy-intensive imports from non-Kyoto countries.

The following measures are legally (largely) unproblematic, but politically unfeasible or undesirable:

- extension of Kyoto commitments to other countries;
- small-party agreements with non-European countries, including sector-wide agreements;
- harmonisation of technical standards in either WTO or Climate Convention;
- minimum standards for subsidies for affected energy-intensive industries.

‘*Red measures*’—measures that are either illegal under current law or politically unfeasible, including unfeasible regarding a reform of the current law. These include:

- lower carbon constraints (which would endanger the legally binding Kyoto targets);
- quotas or bans in trade with non-parties to the Kyoto Protocol;
- reform of the General System of Preferences that would require developing countries to exceed commitments under the Kyoto Protocol;

- punitive tariffs or taxes (which are politically and/or legally unfeasible);
- initiation of a WTO dispute based on lack of cost internalisation.

Finally, it is important to note that regarding most measures discussed in this article, a final evaluation will always depend on the exact definition and implementation of the measure. In other words, many measures could be either legal or illegal, or politically feasible or infeasible, depending on how exactly they are framed and designed. We hope that this article has helped to develop some guidelines on key design questions that need to be addressed.

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